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ABSTRACT

This case study, one in a series of research efforts designed to examine the utilization of the Administration on Aging's research, describes the different types of uses of materials produced by a research project on improvement of transportation services for the elderly. (The materials are a state-of-the-art report, planning handbook, and site-assistance kit.) Illustrative vignettes describe how three user groups--policy makers, planners, and service operators--used the research results. In general, these uses are defined: (1) federal policymakers integrated information from the transportation program into new programs and plans; (2) state and area planners used the planning handbook to facilitate provision of training and technical assistance to local service operators and dissemination of documents and information in response to individual inquiries; and, (3) service operators used the handbook to design and run new "demand-responsive" transportation services in rural and urban communities. Five propositions regarding conditions necessary for research utilization are suggested: extensive social networking, interventions to boost utilization, vigorous information dissemination, synthesis of previous findings into the research, and emphasis on development rather than on research. (YLB)

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EXECUTIVE SUMMARY

The Uses of Research Sponsored by the Administration on Aging (AoA)

CASE STUDY NO. 1
Transportation Services for the Elderly

U.S. DEPARTMENT OF EDUCATION
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September 1980

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PREFACE

This is an executive summary of a case study on the usefulness of AoA's research. The full case study is entitled *The Uses of Research Sponsored by the Administration on Aging, Case Study No. 1: Transportation Services for the Elderly*, American Institutes for Research, Washington, D.C., 1980.

This case study represents the first of several on the usefulness of AoA's research. The goal is for each case study to show how and why the research was used for policymaking or practice purposes. The aggregate implications from all of the case studies, together with a separate review of appropriate literature, will be used to develop an R&D utilization strategy for AoA. The case study and the development of this overall R&D utilization strategy are part of the continuing work of the Gerontological Research Institute, supported under AoA award No. 90-AR-2173.

The conduct of the case study was facilitated by the assistance of key informants, who were interviewed from November 1979 to February 1980. The list of informants may be found at the end of this executive summary.

CAPSULE SUMMARY

The accompanying executive summary presents an exemplary case study, showing how research supported by the Administration on Aging has led to practical applications.

The case study involves a research project that was aimed at improving transportation services for the elderly. The project was conducted over a six-year period (1973-1979), and produced three separate materials:

- a State-of-the-Art report on transportation and the elderly;
- a Planning Handbook for state and local officials; and
- a Site Assistance Kit for state and local officials.

Federal policymakers, state and area planners, and local transportation operators across the country have used the results of the project. This case study describes the different types of uses in separate vignettes. In general, the project helped service operators to design and run new "demand-responsive" transportation services in rural and urban communities, enabling older people to carry out their daily activities. At the federal level, the project provided useful information at a time when the Congress was initiating new legislation on transportation services for the elderly.

Several implications for future efforts to improve research utilization have been drawn from the case study. First, utilization efforts may be facilitated through the formation of an informal social network, in which policymakers, researchers, and potential users all develop close communications with each other. Second, interventions designed to boost research utilization may be needed throughout the life of a

research project, and not just at its conclusion. Third, utilization may depend upon vigorous dissemination of research results. Fourth, the relevant research may involve a synthesis of previous findings rather than a singular research effort. Fifth, the more relevant research projects for utilization are those that emphasize the production of handbooks, instruments, and other materials for direct application, rather than those that merely produce research reports; in this sense, the transportation project may represent an excellent example of a "development" rather than purely "research" undertaking, and re-emphasizes the distinction between "R" & "D" types of projects.

These implications will be considered in further case studies, currently underway. Overall, the main objective of the case studies is to assist AoA to develop a broader strategy for its utilization activities. These activities will allow policymakers and practitioners to make appropriate use of information produced by federally sponsored research.

EXECUTIVE SUMMARY

Introduction: Transportation Services for the Elderly

Numerous communities across the country now provide auxiliary transportation services to the elderly. The services involve special vehicles, whose routes are determined on a daily basis by phone calls from elderly citizens. Such "demand-responsive" services assist the elderly in carrying out their everyday activities, whether for shopping, making medically related trips, using community facilities, or visiting friends. In most cases, the auxiliary service is operated independently from the community's mass transit system.

In order to design such services, local agencies have had to resolve such issues as:

- determining the specific transportation needs of the elderly in the community;
- making decisions about the type of equipment and vehicles to purchase;
- designing flexible routing schedules to optimize the use of the vehicles while also meeting citizens' needs;
- managing the service in an efficient manner; and
- monitoring and evaluating the service peformance.

Over the past few years, much of the needed guidance has come from a research project that the Administration on Aging (AoA) initiated in 1973. How this research was conducted and how its results were used are the topics of a full-length case study, one of

several being conducted on the uses of AoA research.[1] The present text is a summary of the full case study.

The Research Project

The transportation research project was directed by Joseph S. Revis of the Institute of Public Administration (IPA), Washington, D.C. From 1973 to 1979, this project produced a number of important materials for designing and implementing transportation services for the elderly. The materials have been used by many local communities, and the research has also been used to develop new Congressional legislation. Over the years, for instance, the Select Committee on Aging (U.S. House of Representatives) has called upon Revis to testify on various aspects of the transportation problems of the elderly.

The project itself began modestly and was based on a proposal submitted to AoA in September 1972. After some delays and negotiations over the project budget, the initial award was made on June 28, 1973 (Grant No. 93-P-57405/1-01), for $75,930. This amount was less than that requested and only covered a 13-month period; but subsequent time and monetary extensions, including a second formal award in 1977, resulted in a total funding level of about $575,000 over a period of June 1973 through May 1979.

The research was based on two sources of information: 1) previous studies of transportation services, and 2) analysis of existing transportation services in a number of cities. The main objective of the research was to synthesize knowledge about these auxiliary transportation services; ultimately, the project was to produce information to assist new transportation service operators. The major materials that were produced included:

- a *State-of-the-Art report*, documenting available knowledge about transportation services for the elderly;
- a *Planning Handbook*, providing guidance for the design and implementation of transportation services by local communities; and
- a *Site Assistance Kit*, structured according to the topics in the Handbook, but providing more extensive materials, including visual aids, for use by local service operators.

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[1] See Robert K. Yin and Ingrid Heinsohn, *The Uses of Research Sponsored by the Administration on Aging, Case Study No. 1: Transportation Services for the Elderly*, American Institutes for Research, Washington, D.C., 1980.

The State-of-the-Art report was completed during the first year of the project (1973-1974). The report was ultimately printed in two different versions, one by AoA[2] and the other by IPA.[3] The Planning Handbook was completed in 1975, and was also reprinted several times, although each reprint contained the same material.[4] These reprints were distributed by the U.S. Department of Transportation (DOT) and by AoA. Finally, the Site Assistance Kit was completed in 1979.

The transportation research project also included support for several conferences and workshops. In September 1974, Revis convened a panel of experts to solicit additional information before the final preparation of the State-of-the-Art report. In February and March of 1975, the project assisted AoA in holding four hearings to obtain reactions from state and local officials. A year later, in September 1976, three regional workshops (in Boston, Kansas City, and San Francisco) were held under joint AoA-DOT sponsorship (but funded through the transportation project), during which local officials and service operators were able to discuss their problems and to clarify the potential uses of the Handbook. Finally, the preparation of the Site Assistance Kit was based in part on specific assistance by Revis and his staff to local projects. The assistance to sites was mainly provided during 1978. Following the completion of the Kit, additional workshops, for training in the use of the Kit, were held in 1979. (Table 1 contains a chronology of the dates when key materials were produced or conferences and workshops were held.)

Uses Made of the Transportation Research Project

Information from the transportation research project has been used in several ways. Along these lines, three different "user" groups are relevant:

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[2] Administration on Aging, *Transportation for the Elderly: The State of the Art*, Washington, D.C., January 1975, DHEW Publication No. (OHD) 75-20081.

[3] Institute of Public Administration, *Transportation for Older Americans*, Washington, D.C., April 1975. This is the full version of the State-of-the-Art report, containing recommendations that were not included in the AoA version. The report is massive, with about 300 pages of single-spaced text, and about 400 pages of appendices. The report was sent to the National Technical Information Service (NTIS) for further distribution (NTIS No. PB243441).

[4] The IPA edition of the Handbook is: Institute of Public Administration, *Planning Handbook: Transportation Services for the Elderly*, Washington, D.C., November 1975. The AoA reprint was issued under the same title and date, DHEW Publication No. (OHD) 76-20280. Other reprints were distributed by DOT (see Federal Highway Administration, *FHWA Bulletin*, July 9, 1976, distributing the Handbook to DOT's regional and field offices). The DOT edition of the Handbook was printed in June 1976.

TABLE 1
Chronology of Key Events in Transportation Research Project

September 1972	Proposal submitted to AoA by the Institute of Public Administration (Joseph Revis, principal investigator)
June 1973	First award made by AoA (93-P-57405/01)
September 1974	Panel of experts meets in Belmont, Md., to augment project's work
January 1975	State-of-the-Art report published by AoA
February - March 1975	AoA holds four hearings to review report; Revis and staff provide assistance
April 1975	State-of-the-Art report published by IPA
November 1975	Planning Handbook published by IPA and reprinted by AoA
June 1976	Planning Handbook reprinted by DOT
September 1976	AoA-DOT sponsor three regional workshops (funding and staff assistance through transportation project)
December 1976	First award expires
March 1977	Second award made by AoA (90-A-1076/01)
January 1979	Site Assistance Kit completed
Spring 1979	Training sessions held, to instruct on use of Kit
September 1979	Second award expires

- **Policymakers**, mainly officials in federal agencies or the Congress, who may use research information to develop new initiatives or modify old ones;

- **Planners**, mainly members of state and areawide agencies, who may use research information to create better plans for local action, including the provision of training and technical assistance to individual sites; and

- **Service operators**, who may use research information to design and operate specific services for the elderly.

Although a given research project may serve only one of these "user" groups and still be considered an exemplary case, the transportation project enjoyed success with all three types of groups. The following illustrative vignettes describe how each group used the research results.[5]

Uses by policymakers. Federal and Congressional interest in transportation services for the elderly was active throughout the 1970s. Policymakers responded to the apparent needs of their constituents and initiated a variety of support programs, the most relevant of which have been listed in Table 2. In addition to new legislation, two Congressional standing committees—the House Select Committee on Aging and the Senate Special Committee on Aging—have continually held hearings and produced reports over the decade.[6]

The formulation of new policies is a diffuse activity that is not easily defined by a specific set of critical decisions or attributable to the use of a limited number of information sources. Rather, policy is made incrementally and from a wide variety of sources, involving both research-based and nonresearch-based information. It would therefore be incorrect to assume that a specific effort, such as the transportation project, produced a specific policy outcome. However, there is ample evidence to indicate that the transportation project's

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[5] These are but summaries of a subset of the vignettes printed in the full case study.

[6] These reports are summarized in a bibliography, Special Committee on Aging, *Publications List, February 1961-December 1978*, U.S. Senate, 96th Congress, 1st Session, April 1979. Of special interest is a series of hearings and reports, published under the general title *Transportation and the Elderly*, in six parts, covering the period February 1974 to July 1977.

TABLE 2
Federal Programs for Transportation and the Elderly

LEGISLATIVE MANDATE	YEAR OF FIRST IMPLEMENTATION	DESCRIPTION
		A. Provision of Assistance
Federal-Aid Highway Act of 1973 (Section 147)	1974	*Rural Demonstration Program:* Provided for a two-year public transportation demonstration program, to encourage the use of public mass transportation in rural areas. About 200 projects were funded on a once-only basis, some of which focused on the needs of the elderly.
Urban Mass Transportation Act of 1964, as amended in 1973 (Section 16(b) (2), Title III)	1975	*Assistance to Nonprofit Organizations:* Provides capital assistance grants to support transportation services for the elderly and handicapped. About $20-25 million have been allocated annually.
Urban Mass Transportation Act of 1964, as amended in 1974 (Title V)	1974	*Assistance for Transportation Operators:* Provides operating assistance for public and private nonprofit agencies and organizations, with a portion to be used for services for the elderly and handicapped.
Surface Transportation Act of 1978 (Section 18)	1979	*Assistance for Rural Areas:* Provides formula grants for public transportation in rural and small urban areas. About $12 million were allocated in the first year, some of which focused on the needs of the elderly. Program succeeds Section 147 Rural Demonstration program.
Older Americans Act of 1965, as amended in 1972 (Title VII)	1973	*Nutrition Program:* Provides funds to support nutrition programs for older persons, including support for transportation and personal escort services to assure that the maximum number of eligible individuals is served.
Older Americans Act of 1965, as amended in 1973 (Title III)	1974	*Transportation Assistance:* Provides for development and support of transportation services, where necessary, to facilitate access to other social services or to reduce isolation of older persons. Does not permit direct subsidies for overall transit system or for a general reduced-fare program.
		B. Promotion of Accessibility and Availability
Urban Mass Transportation Act of 1964, as amended in 1973 (Section 5 (m))	1974	*Reduced Fares:* Mandates reduced fares for elderly and handicapped persons during non-peak hours on transit systems receiving Section 5 funds. Fares not to exceed one-half the rates charged during peak hours.
Federal-Aid Highway Act of 1973 (Section 165 (b))	1974	*Mass Transportation Assistance:* Requires that all DOT projects be planned and designed so that mass transportation facilities and services can be utilized by elderly and handicapped persons.
Rehabilitation Act of 1973 (Section 502 (c))	1974	*Transportation Barriers:* Requires public and private organizations receiving funds from any federal source to eliminate transportation barriers that impede the mobility of handicapped and aged handicapped individuals.

results were integrated with Congressional and agency thinking at the federal level. Several instances may be cited:

Vignette No. 1

In 1973, the Congress mandated AoA to conduct a special study of transportation services for the elderly (*Older Americans Act of 1965 as Amended*, Title IV, Section 412). Though the transportation project was not originally designed to fulfill this mandate, the project was expanded in the spring of 1974 to accommodate this need, and AoA Commissioner Arthur S. Flemming was then able to use the State-of-the-Art report to satisfy the Congressional mandate. The AoA version of the report was delivered to Congress in time to satisfy the January 1, 1975 deadline that had been set.

Vignette No. 2

Representatives Spark M. Matsunaga (D-Hawaii, 1st District) and Mario Biaggi (D-New York, 10th District) requested the General Accounting Office (GAO) to conduct a study on transportation services for the elderly. The goal of the study was to document and analyze the relationships among 14 federal programs relevant to such services. The GAO study was completed in 1977 and drew almost totally from the reports prepared by the transportation research project.[7]

Vignette No. 3

The Administration on Aging, led by Commissioner Flemming, developed a series of interagency working agreements with other federal agencies. The agreement with the Department of Transportation was first signed in June 1974 and updated in September 1975. The agreement was aimed at developing joint AoA-DOT activities to support transportation services for the elderly, and the substantive basis for the agreement drew heavily from the reports by the transportation research project. In particular, the 1975 agreement cited information from the State-of-the-Art report and announced the forthcoming Handbook.

In summary, officials in both Congress and the relevant federal agencies have used information from the transportation project to formulate new programs and plans. Many of the officials are also personally acquainted with Joseph Revis and feel free to consult him on a variety of matters.

Uses by planners. Planning functions are conducted at state and substate levels by both transportation agencies and agencies on aging. In either case, the planning is needed to assure that areawide needs are served, and the resulting plans are often the prelude to further federal

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[7]Comptroller General of the United States, *Transportation Programs for the Elderly*, Washington, D.C., April 7, 1977.

funding. In transportation, for instance, joint Urban Mass Transportation Administration and Federal Highway Administration regulations require plans to be developed and to address the special needs of the elderly and the handicapped.

Besides identifying areawide needs and indicating how such needs will be met, state and local planning agencies also carry out other functions. These include: the provision of training and technical assistance to local service operators; and the dissemination of documents and information in response to individual inquiries. Yet another function is for the agencies to encourage local coordination, by improving the communication among the organizations serving the elderly.

The Planning Handbook has been used in many states and areas to facilitate all of the above types of planning activities:

Vignette No. 4

A staff member in the North Carolina State Public Transportation Office used the Planning Handbook to provide technical assistance on transportation planning to local agencies. The Handbook provided background and procedural information to staff who were developing plans on coordination of human services. Although the section on budget preparation was specifically cited as very useful, the whole Handbook was considered to be a very good document. Its major advantage was its "cookbook" approach to covering every aspect of human service transportation planning. Copies of the Handbook were loaned to councils of government, councils on aging, and CAP (community action) agencies.

Vignette No. 5

A Texas area agency on aging has contracted for transportation services in four planning and service areas. The service operators are a county government, a home health agency, and two private nonprofit organizations. In addition to receiving AoA funds under Titles III and V of the Older Americans Act, contractors are supported by other sources (CETA, Title XIX of the Social Security Act, and local funds).

In 1977-78, the agency began to develop a monitoring system for its contractors. In designing the system the agency used material in the Planning Handbook and from other area agencies. Information was abstracted from the monitoring and evaluation section of the Handbook and from logs, survey instruments, and intake forms used by the other agencies. Questions were developed on the quality of service, on costs, on employees and clients, and on visibility. As a result of this monitoring system, reporting occurs on a regular basis.

Uses by service operators. Special transportation services for elderly and handicapped persons are operated by nonprofit corporations, pub-

li transit systems, transportation authorities, and private enterprises. These services may be offered independently, as a component of several social services, or as part of a larger general public transit operation.

Not all operators provide the same type of service. Services vary with the size of geographic area, frequency of need, and target population. For instance, a subscription or fixed route service is commonly established when there is travel to few destinations on a regular, repetitive basis. In areas of low residential density, a demand-responsive service, with 24-hour notification, is more appropriate than a fixed route service. The demand-responsive service can be operated with a limited or unlimited number of destinations.

The Planning Handbook has been used by service operators across the country, some of whom have been responsible for designing and implementing a system in addition to operating it. The Handbook has provided general background information on the development of transportation services and has also been used as a sourcebook in providing answers to specific questions. Especially useful have been the sections dealing with developing a data base, designing the service, and monitoring and evaluation.

Some of the ways in which the Handbook was useful to local operators are described in the following vignettes.

Vignette No. 6

Since February 1979, a CAP agency in Missouri has been operating a transportation service for senior citizens in a rural, four-county area. The agency is under contract to a regional area agency on aging to provide transportation to five nutrition centers. The service assists 420 elderly, of whom none own cars and 85 percent are low-income. The total number of rides per month ranges from 4,400 to 4,800.

As the first steps in designing this service, the CAP director of transportation conducted extensive research on transportation services. She made a site visit to a system in Iowa, attended a technical assistance workshop held by the Institute of Public Administration, and acquired transportation literature. Among the literature received, the Planning Handbook was identified as the most useful source of information. It was used for designing a survey to determine transportation needs, for selecting vehicles, for estimating operating expenses, and for monitoring and evaluating the system.

Vignette No. 7

A Texas community action agency operates a transportation system for the elderly and handicapped in a 25,000 square mile area, covering 25 counties and the City of Amarillo. Three types of service are furnished: a demand-responsive service with 24-hour advanced notification, which composes 90 percent of the trips; a demand-responsive service without

prior notification which composes five percent; and a fixed route service for the elderly to nutrition centers and for handicapped children which composes five percent. In Amarillo, ridership is approximately 2,300 per month; in the rural areas, it averages 75 per month.

When the director of transportation joined the CAP agency four years ago, his first task was to redesign the existing transportation service. Upon seeing the Planning Handbook cited in a brochure during his search for literature, he borrowed a copy from a colleague. Because the director had to work with an existing system, much of the information in the Handbook was not applicable. In spite of that, however, he did find the Handbook to be a good sourcebook. The sections on building a data base and planning survey instruments were identified as the most useful. Information on costs and vehicle suppliers was found in more recent resource material.

Other uses of the Handbook were also cited. The Elderly and Handicapped Technical Committee of the Amarillo Urban Transportation Study is presently assessing the availability of the city's transportation services to the elderly and handicapped. The Handbook has provided a good framework for this study and has also been discussed at transportation meetings. In spite of its urban emphasis, parts of the Handbook were used for the planning of services in rural areas.

Summary. The preceding vignettes offer evidence of the utilization of the transportation research project at federal, state, and local levels. The information produced by the project has been used: to establish further federal support for transportation for the elderly; to plan local transportation systems; and to implement specific local services for the elderly. As a partial indicator of this success, the reports from the transportation research project have been reprinted several times, as a result of continued demands for copies. To date, there has been a total volume of about 3,500 copies of the State-of-the-Art report and 8,500 copies of the Planning Handbook. In addition, the impression from speaking with many people is that the project is well-known and the principal investigator well-regarded. Finally, few other comparable sources of research information were cited by local respondents as being used in a similar manner to design transportation services for the elderly.

Why the Transportation Research Project was Useful

Why utilization occurred with such success is a major topic of the full case study. A key objective of the case study, as well as other case studies currently being conducted, is to develop an improved utilization

strategy for AoA. Thus, the full development of any policy conclusions is premature. The present case study does, however, suggest several policy implications, which may be put into propositional form for future consideration.

Proposition No. 1: Utilization was intensive and extensive because of the development of an informal social network, which linked federal policymakers, the research team, and local service operators. This proposition is at the essence of evidence presented in the full case study. For example, although many of these people are now in different organizational positions, they can still refer to one another on a personal basis in retrospective interviews. The strength of the network meant that, at least during the period of peak activity (1974-1976), local and other outside officials seeking more information about transportation for the elderly could tap easily into the network by contacting any single member. Our hunch is that this is the kind of communication system within which research utilization thrives.

If correct, the proposition suggests that many networking steps may need to be taken throughout the life history of a research project. Moreover, linkages *within* a federal agency—i.e., between its research monitoring staff and its policymaking staff—may be as important as linkages *between* the agency and other parties.

Proposition No. 2: "Interventions" designed to boost utilization may be needed throughout the research process, and not just at a single point during a presumed linear sequence. The case study showed that efforts related to utilization occurred throughout the life of the research project, and not simply at its completion. For instance, workshops, conferences, and other joint activities helped to modify the project at intermittent points.

To the extent that this observation is found in other case studies, an important policy implication is the following: Multiple interventions, tailored to different activities throughout the life history of a research project, may be needed to enhance the utilization of a project's results. For instance, a single-intervention strategy, on the part of a research-funding agency, may be the requirement for dissemination plans by individual research projects. Such an intervention strategy may be considered weak in relation to what occurred in the transportation research project, where policymakers "intervened" throughout the life of the project—i.e., in shaping its scope, adapting its products to new external needs, as well as disseminating the results broadly.

Proposition No. 3: Utilization cannot take place without substantial dissemination of information. Because dissemination has been considered a necessary but not sufficient condition for utilization,[8] many federal agencies have increasingly concentrated in recent years on utilization programs. The present case study showed, however, that dissemination cannot be overlooked. Although utilization requires additional actions, the basic dissemination of the research information must occur rapidly and extensively. However, vigorous dissemination efforts, serving as one step toward effective utilization, may be a current weakness of several federal R&D-funding agencies, such as AoA. Many of these agencies may rely too heavily on clearinghouse approaches, in which "users" must initiate requests for information. In contrast, the dissemination of the transportation project's results was conducted in a targeted fashion, in which federal officials actively transmitted materials to relevant audiences.

Proposition No. 4: The transportation project was a synthesis rather than a single study, thereby facilitating utilization. The nature of scientific research is that single studies rarely produce stable results, and that "facts" only emerge after a series of studies has provided corroboratory evidence, or after a formal synthesis of previous studies has been conducted. Because of this characteristic of research, utilization may occur more effectively following a synthesis rather than a single study.[9] The transportation project's experience reinforces this notion, because the project's main research was a synthesis effort. The project was not a singular experiment or data collection activity; rather, the final products ultimately represented the aggregation of findings from many previous studies as well as from field experiences. State-of-the-art reports and handbooks may be peculiar research products in this regard. They implicitly require an aggregative approach, and they may be more likely to lead to effective utilization. Of course, the synthesis activity can only occur if a field has already produced sufficient individual studies that are worthy of aggregation in the first place.

In the case of the transportation project, the synthesis activity was also enhanced by two other factors. First, Revis and his IPA colleagues had been conducting research on transportation for many years, includ-

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[8] For instance, see Samuel Ball and Scarvia B. Anderson, "Dissemination, Communication, and Utilization," *Education and Urban Society*, August 1977, 9:451-470.

[9] See Robert K. Yin, *R&D Utilization by Local Services*, Rand Corporation, Santa Monica, California, December 1976.

ing the six years of the transportation project's formal existence. Such a prolonged period, dedicated to the same topic, often means that an investigator will become an "expert" and can call forth information based on more than what was learned on a single project. In short, *the researcher*, and not just a particular study, may serve as an important vehicle for synthesis and dissemination.

Proposition No. 5: The transportation project was a "development" project, rather than a "research" project, thereby facilitating utilization. In the social sciences, the distinction between research and development is typically blurred by the phrase "R&D project." Such a distinction is more evident in the physical sciences, where "research" can be said to produce new ideas and "development" can be said to apply these ideas to produce usable goods or techniques. Though the distinction is not always clear, it is potentially relevant to the social sciences, where handbooks, syntheses, kits, interview instruments and other assessment tools may all be said to be the products of "development" projects.

If this distinction is valid, the transportation project was a "development" project in two important ways. First, the main source of ideas for the project stemmed from prior research—i.e., the transportation project's own empirical efforts were aimed primarily at testing and modifying ideas that had already been published in previous studies. Second, the main product from the transportation project was not simply a research article or book manuscript, but a state-of-the-art report, a handbook, and a site assistance kit.

Consideration of this distinction leads to further policy implications. "Development" projects may require different procedures and support from R&D-funding agencies than are needed by "research" projects. For instance, development projects may be more costly, may require extended periods of support to allow for midstream adjustments, and may require monitoring and quality control procedures other than the standard external review of final manuscripts.

PEOPLE INTERVIEWED FOR CASE STUDY

Name	Present Title	Title During Transportation Project
Tim Chiamardas	Office of Public Information AoA Washington, D.C.	
Peter Conga	Transportation Consultant Austin, Texas	
Philip Corwin	Assistant to Sen. Williams (D-New Jersey) Washington, D.C.	Staff Member Special Committee on Aging, U.S. Senate
Dolores Cutler	Chief, Longterm Care Coverage Branch Division of Longterm Care Office of Research, Demonstrations, and Statistics Health Care Financing Administration Baltimore, Md.	Chief, Policy and Analysis Division Office of Planning and Evaluation AoA
Wanda Dyer	Director, Capital Area Rural Transportation System (CARTS) Austin, Texas	
Richard Evans	Division of Transportation Planning Colorado Department of Highways Denver, Colorado	
Marjorie Finney	Assistant Clerk Special Committee on Aging, U.S. Senate Washington, D.C.	
B. Firing	Director of Transportation County of Somerset Somerville, New Jersey	
Arthur Flemming	Chairman, U.S. Commission on Civil Rights Washington, D.C.	Commissioner AoA
Alice Garland	North Carolina Department of Transportation Raleigh, North Carolina	
Kenneth Grantham	Director of Transportation Texas Panhandle Community Action Amarillo, Texas	
Ira Laster	Senior Program Coordinator U.S. Department of Transportation Washington, D.C.	Office of the Assistant Secretary for Policy and International Affairs Office of Environment and Safety U.S. Department of Transportation

PEOPLE INTERVIEWED FOR CASE STUDY (Continued)

Name	Present Title	Title During Transportation Project
June Lovewell	Economic Security Corporation Joplin, Missouri	
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